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EXAMINER	
MARANDI, JAMES R	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/072,114	KIKINIS ET AL.	
	Examiner	Art Unit	
	JAMES R. MARANDI	2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7-10,12,13,17,21-24,26-29,31,40,41,43,44 and 46-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7-10,12,13,17,21-24,26-29,31,40,41,43,44 and 46-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/24/2009,7/30/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to applicant's amendment filed on 6/11/2009. Claims 1, 7-10, 12, 13, 17, 21-24, 26-29, 31, 40, 41, 43, 44, and 46-55 are presently pending. Claims 2-6, 11, 14-16, 18-20, 25, 30, 32-39, 42, and 45 have been cancelled.

Response to Arguments

2. Applicant's arguments filed on 6/11/2009 have been fully considered but they are not persuasive.

2.1. As to claims 1 and 31, applicant argues that ***"The relied-upon portions of Cove only describe a rotatable function menu in which different video functions are displayed and available for selection by the user. Neither the cited portions nor any other portion of Cove teach or suggest wherein an image captured from a video stream is displayed in Cove's rotatable function menu."*** Page 11 of Remarks, 2nd paragraph

Examiner disagrees with applicant's interpretation of Cove's reference. As stated in the office action of 3/11/09, claims 1 and 31 were rejected over Oosterhout in view of Cove. Oosterhout discloses capturing and displaying reduced size images (as in Fig. 9) and making them available to the viewer for selection. Oosterhout's presentation of such images is in the same two dimensional plane (as other TV function control on a screen-based menu).

Cove provides a three dimensional, rotatable, polyhedron (as in Figs. 2, 6, and 7), where each side can be programmed to perform a function (Col. 1, lines 56-67) including launching a video channel. Cove further offers a motivation for doing so, as reflected in Col. 1, lines 39-54, which is to provide more flexibility and ease in selecting various functions/ channels.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the planar channel selection system of Oosterhout with three dimensional polyhedron invention of Cove in order to provide more flexibility and ease in selecting various functions/ channels.

2.2. As to claim 17, applicant repeats the same reasoning as claims 1 and 31 which have been addressed above.

2.3. As to claim 51, reciting "mapping each of the plurality of reduced size thumbnails..." , applicant presents the same arguments as has been addressed for claims 1, and 31 above.

Applicant further argues that "***Fig. 7A of Cove only shows rotatable function menus, it does not teach or suggest wherein a "geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation***". Page 12 of Remarks, 3rd paragraph

Examiner disagrees. As Cove discloses selecting a function (launch a video program) by rotating the polyhedron, the selected option facing the viewer always has the larger proportion compared to other options pending future selection. For example, as can be seen in Fig. 5, rotating the polyhedron and selecting Audio (59a) shows the "Audio" area to be larger than "Timer". However, rotating the polyhedron to Timer shows "Timer" area to be more prominent/ larger than the "Audio" area.

2.4. Applicant presents similar reasoning for dependent claims 7-10, 12, 13, 21, 21-24, 26-29, 40, 41, 43, 44, and 46-50 as presented for corresponding independent base claims, which has been addressed above.

2.5. Applicant further argues (as to claims 48-50) that "***Oosterhout never teaches or suggests converting a video stream to a lower resolution. In fact, the terms "convert" and "resolution" do not appear anywhere in Oosterhout's disclosure***". Page 12 of Remarks, last three lines

Examiner disagrees. Referring to Oosterhout, Col. 5, lines 24-36, where it is discloses that the refresh rate or the size of relevant sub-images (thumbnails) may reduced. Reducing the refresh rate is a transformation/ conversion while it reduces image quality/ resolution.

Priority

3. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 112 for claims 1-35 of this application.

In particular, in amendment of June 2002, applicant claims priority to application 09/344,442 as a continuation-in-part, which claims priority to application 09/361,470 as a continuation-in-part, further claims priority to application 09/378,184 as a continuation-in-part, further claims priority to application **09/378,220** as a

continuation-in-part, and further claims priority to application 09/488,361 as a continuation-in-part.

Application **09/378,220**, now USPN 6,526,449, is the work of others.

It is acknowledged that applicant's amendment of June 2008 corrected an apparent typographical error and replaced application number **09/378,220** with **09/378,270** (filed 8/20/99, now abandoned).

However, as stated in office action of 3/11/2009, the disclosures of the above applications fail to disclose the subject matter claimed by applicants in the instant application. Specifically, the disclosures of these applications fail to disclose **comparing contrast levels, brightness levels, or color saturation levels among the snapshots and determining the most presentable snapshot when the most presentable snapshot has a best contrast, a median brightness, or highest color saturation**.

Accordingly, applicants are denied the benefit of the 06/25/1999 filing date of CIP of application 09/344442, the 07/27/1999 filing date of CIP of application 09/361470, and the 08/20/1999 of CIP of application 09/378184, and the 08/20/1999 filing date of CIP of application 09/378270, and the 1/16/2000 filing date of CIP of application 09/488,361.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 10, 12, 13, 17, 24, 26- 29, 31, 40, 41, 46-51, 53, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oosterhout et al., USPN 6,405,371 (hereinafter "Oosterhout") in view of Cove et al., USPN 6,411,337 (hereinafter "Cove").

5.1. Regarding claim 1, Oosterhout discloses **a method comprising:**

providing a plurality of individual image areas in an EPG display (Fig. 2);

receiving a user selection corresponding to a selected channel (Fig. 3, elements 300,301,302);

detecting a video stream corresponding to the selected channel (upon selection of channel, 302, the corresponding stream is detected);

capturing a plurality of snapshots snapshot from the video stream (video stream composed of plurality of I-frames, snapshots, which are captured and displayed on screen);

identifying a first snapshot from the plurality of snapshots captured from the video stream (the snapshot/frame received/detected);

converting the first snapshot captured into a reduced image of real-time programming (Fig. 9, e.g. TF2); **and**

displaying the reduced image of real-time programming in a first of the individual image areas (Fig. 9, lower portion of the full screen, image areas associated with the selected channels, reduced image may also be of reduced **resolution,** Col. 1, lines 64-67**), wherein the reduced video image is associated with the selected channel** (TF2, RTL4, CNN, BRT are reduced images presented on the screen). Col. 3, line 20, through Col.5, line 23.

Oosterhout is silent on:

displaying a graphical representation of a polyhedron,

displaying the reduced image on a side of the graphical representation of the polyhedron

However, Cove, in analogous art, discloses:

displaying a graphical representation of a polyhedron(Figs. 2,6, and 7),

displaying the reduced image on a side of the graphical representation of the polyhedron (Fig. 6, video element). Col. 6, lines 52-61

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

5.1.1. Regarding claim 10, Oosterhout discloses wherein **snapshot is filtered to change the display characteristics of the snapshot,** Col. 4, lines 30-33.

5.1.1.1. Regarding claim 12, Oosterhout discloses wherein **snapshot is filtered by one of enhancing or reducing a contrast,** Col. 4, lines 30-33.

5.1.1.2. Regarding claim 13, Oosterhout discloses wherein **snapshot is filtered by a one of enhancing or reducing color saturation,** Col. 4, lines 30-33.

5.1.2. Regarding claim 40, Oosterhout as modified by Cove further teaches **displaying an additional reduced image corresponding to a different selected channel on a different side of the polyhedron**, each

side/surface is assigned to a function such as video selected by the user (Cove: Fig. 6, Col. 6, lines 52-61)

5.1.2.1. Regarding claims 41, Oosterhout as modified by Cove further teaches that:

receiving a user request to rotate the polyhedron to display information corresponding to the different selected channel (Cove: Figs. 6, and 7; Col. 6, line 37 through Col. 7 line 58); **and**

updating the EPG display by rotating the graphical representation of the polyhedron so that a greater portion of the polyhedron side corresponding to the different selected channel is displayed in the first of the individual image areas (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, e.g. - Cove: Fig. 7A, "Exit" represents the largest viewable surface).

5.1.3. Regarding claim 48, Oosterhout as modified by Cove further discloses:

identifying a segment of the video stream (as taught by Oosterhout, programs are selected based on specified point of time, Col.

4, lines 49-56) **corresponding to the selected channel** (Channels are displayed in Fig. 7)

converting the segment of the video stream to a reduced resolution video stream (Oosterhout, Fig. 7, TF2, which is subsequently selected and presented within the list of selected programs in Fig. 9); **and**

displaying the reduced resolution video stream on the side of the graphical representation of the polyhedron in the first of the individual image areas (Cove: Fig. 6, video element).

5.1.4. Regarding claim 53, the system of Oosterhout and Cove discloses **displaying the graphical representation of the polyhedron** (Cove: Figs. 2, 5, 6,7) **comprises rendering a plurality of reduced images of real-time programming on different sides of the polyhedron** (as analyzed for claim 1, rendering functions or Oosterhout's EPG on Cove's polyhedron) **Wherein each of the plurality of reduced images of real-time programming corresponds to a snapshot from a different channel** (as disclosed by Oosterhout)**, and wherein the different sides of the polyhedron are rendered on different portions of the electronic programming guide (EPG) display, the different portions being simultaneously visible and having different sizes and shapes in the electronic programming guide (EPG) display (**as disclosed by Cove, e.g.

Fig. 5, the Audio selection along with other functionalities are displayed on different sides of the polyhedron. Combination of Oosterhout and cove provides for snapshots of various EPG programs to be presented on different sides of said polyhedron and launched upon user selection (functions as disclosed by Cove).

5.2. Regarding claim 17, Oosterhout teaches **an apparatus comprising**:

a tuner (Fig. 1, 22) **configured to tune to a selected channel to receive a video stream** (22, Col. 2, lines 58-67);

a shutter function configured to capture a plurality snapshots from the video stream (capturing video frames at 22, MPEG decoding is accomplished by capturing frames of the transport stream, e.g. I-frames);

an image improver (element 30 enables the system to distinguish viewer's selections from other available programs in the EPG, Col. 3, lines 11-17), **configured to identify a first snapshot from the plurality of snapshots captured from the video stream** (determining which video frames should be presented in a visual program summary , Fig. 2); **and**

a display (24) **configured to:**

display an EPG comprising a plurality of individual image areas (Fig. 2);

and display the first snapshot in the first individual images area, wherein the first snapshot is associated with the selected channel (selected channel of Fig. 2, is highlighted as shown in Fig.5, 45a. The final selection of programs is shown in Fig. 9, TF2, RTL4, CNN, and BRT). Col. 3, line 20, through Col.5, line 23.

Oosterhout is silent on:

displaying a graphical representation of a polyhedron,

displaying the reduced image on a side of the graphical representation of the polyhedron

However, Cove, in analogous art, discloses:

displaying a graphical representation of a polyhedron (Figs. 2,6, and 7),

displaying the reduced image on a side of the graphical representation of the polyhedron (Fig. 6, video element). Col. 6, lines 52-61

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

5.2.1. Regarding claim 24, Oosterhout discloses a **filter to filter the display characteristics of the snapshot,** Col. 4, lines 30-33.

5.2.1.1. Regarding claim 26, Oosterhout discloses wherein **filter enhances the snapshot contrast,** Col. 4, lines 30-33.

5.2.1.2. Regarding claim 27, Oosterhout discloses wherein **filter reduces the snapshot contrast,** Col. 4, lines 30-33.

5.2.1.3. Regarding claim 28, Oosterhout discloses wherein **filter enhances the snapshot's color saturation,** Col. 4, lines 30-33.

5.2.1.4. Regarding claim 29, Oosterhout discloses wherein **filter reduces the snapshot's color saturation,** Col. 4, lines 30-33.

5.2.2. Regarding claim 49, Oosterhout as modified by Cove further discloses:

identifying a segment of the video stream (as taught by Oosterhout, programs are selected based on specified point of time, Col. 4, lines 49-56) **corresponding to the selected channel** (Channels are displayed in Fig. 7)

converting the segment of the video stream to a reduced resolution video stream (Oosterhout, Fig. 7, TF2, which is subsequently selected and presented within the list of selected programs in Fig. 9); **and**

displaying the reduced resolution video stream on the side of the graphical representation of the polyhedron in the first of the individual image areas (Cove: Fig. 6, video element).

5.2.3. Regarding claim 55, the system of Oosterhout and Cove discloses **displaying the graphical representation of the polyhedron** (Cove: Figs. 2, 5, 6,7) **comprises rendering a plurality of reduced images of real-time programming on different sides of the polyhedron** (as analyzed for claim 17, rendering functions or Oosterhout's EPG on Cove's polyhedron) **Wherein each of the plurality of reduced images of real-time programming corresponds to a snapshot from a different channel** (as disclosed by Oosterhout)**, and wherein the different sides of the polyhedron are rendered on different portions of the electronic programming guide (EPG) display, the different portions being simultaneously visible and having different sizes and shapes in the electronic programming guide (EPG) display (**as disclosed by Cove, e.g. Fig. 5, the Audio selection along with other functionalities are displayed on different sides of the polyhedron. Combination of Oosterhout and cove provides for snapshots of various EPG programs to be presented on

different sides of said polyhedron and launched upon user selection (functions as disclosed by Cove).

5.3. Computer code claims 31, 46, 47, and 50 recite similar limitations of method claims 1, 40, 41, and 48 respectively, and are rejected for the same reasons as addressed.

5.4. Regarding claim 51, Oosterhout teaches **A method for displaying programming information in an electronic programming guide** (Figs 2, and 9) **comprising**:

receiving at a television system a video stream corresponding to a plurality of television channels (Fig. 1, plurality of channels, MPEG 11.1 through11.n is received at receiver 21)**;**

receiving a plurality of user selections, wherein each user selection identifies a television channel selected to be displayed within an electronic programming guide on the television system (user selection process is outlined in Fig.3. An interim view of user selection is illustrated in Fig. 7, and the final selected channels are shown in Fig.9)**;**

capturing a plurality of snapshot images from the video stream (MPEG I-frames) **based on the plurality of user selections, wherein the**

plurality of snapshot images comprises at least one video image from each of a plurality of current television programs playing on the plurality of selected television channels (capturing video frames from selected channels 11.1 through 11.n, as displayed originally in Fig.2, and selected from to present Fig. 9);

converting each of the plurality of snapshot images to reduced size thumbnail images (thumbnail/snapshots, for example Fig. 2, TF2)**;**

identifying the television channel associated with the geometric surface selected via the user input (thumbnail/snapshots are presented in reduced size geometric- two dimensional- squares, Fig. 9, e.g. TF2)**;**

creating an updated reduced sized thumbnail image based on the at least one video image from the identified television channel (thumbnails are updated in real time or based on specific refresh rates; Col. 1, lines 64-67; Col. 4, lines 54-56)**;**

Oosterhout does not teach:

displaying a first graphical representation of a 3-dimensional polyhedron within the electronic programming guide, wherein a plurality of geometric surfaces of the 3-dimensional polyhedron are simultaneously visible within the electronic programming guide, and wherein the plurality of visible geometric surfaces are rendered on different portions of the screen and have different sizes, and wherein the plurality of visible

geometric surfaces are each rendered with a different lighting level based on the relative positions of the surfaces within the polyhedron;

mapping each of the plurality of reduced size thumbnail images to distinct geometric surfaces of the 3-dimensional polyhedron;

receiving user input via the electronic programming guide selecting one of the geometric surfaces of the 3-dimensional polyhedron;

displaying a second graphical representation in which the 3-dimensional polyhedron is rotated within the electronic programming guide such that the geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation.

However, Cove, in analogous art, discloses:

displaying a first graphical representation of a 3-dimensional polyhedron (Figs. 2,6, and 7) **within the electronic programming guide** (Polyhedron is shown in Fig. 2, superimposed on a movie scene. Polyhedron representing various functions may be superimposed on demand on any window including the program guide)**, wherein a plurality of geometric surfaces of the 3-dimensional polyhedron are simultaneously visible** (Fig. 2, 59a, 59, etc.) **within the electronic programming guide, and wherein the plurality of visible geometric surfaces are rendered on different portions of the screen and have different sizes** (59a and 59 are in different positions and have

different sizes), **and wherein the plurality of visible geometric surfaces are each rendered with a different lighting level based on the relative positions of the surfaces within the polyhedron** (59a, 59, and 52 have different lighting levels);

mapping each of the plurality of reduced size thumbnail images to distinct geometric surfaces of the 3-dimensional polyhedron (various functions may be mapped to various surfaces of the polyhedron, e.g. Fig. 6, video element, TV plus element, each of which may be the mapping of a selected channel as taught by Oosterhout);

receiving user input via the electronic programming guide selecting one of the geometric surfaces of the 3-dimensional polyhedron (polyhedron surfaces are selectable by the user, Col. 1, lines 20- 27);

displaying a second graphical representation in which the 3-dimensional polyhedron is rotated within the electronic programming guide such that the geometric surface corresponding to the identified television channel is rendered in a larger portion of the screen than the corresponding surface in the first graphical representation (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, e.g. - Cove: Fig. 7A, "Exit" represents the largest viewable surface).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout with Cove's invention in order to enable the viewer to conveniently follow/monitor/navigate through multiple programs at the same time (as taught by Oosterhout Col. 1, lines 31-35, and Cove Col.1, lines 39-55).

6. Claims 7-9, 21-23, 43, 44, 52, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oosterhout in view of Cove, in further view of Toklu et al., USPN 6,549,643 (hereinafter "Toklu").

6.1. As to claims 7, 8, and 9, the system of Oosterhout and Cove is silent on **comparing contrast levels, brightness levels, or color saturation levels among the snapshots and determining the most presentable snapshot when the most presentable snapshot has a best contrast, a median brightness, or highest color saturation**.

However, Toklu, in analogous art, discloses a method and system for accessing a collection of images (Fig. 2, Video in, element 11), and using a technical quality measure (15, 16, 17) to select the best (most presentable) key frame (I-frame, image, element 13), wherein the quality metric indicates the color, brightness, contrast of the image. (Col. 5, line 61 through Col. 6, line 7). The difference between frames via a pixel based frame difference analysis, or a color

histogram analysis are reflective are contrast, brightness, and color saturation differences.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and Cove with Toklu's invention in order to select the best image for the presentation on the EPG.

6.2. As to claims 21, 22, and 23, the system of Oosterhout and Cove is silent on **comparing contrast levels, brightness levels, or color saturation levels among the snapshots and determining the most presentable snapshot when the most presentable snapshot has a best contrast, a median brightness, or highest color saturation**.

However, Toklu, in analogous art, discloses a method and system for accessing a collection of images (Fig. 2, Video in, element 11), and using a technical quality measure (15, 16, 17) to select the best (most presentable) key frame (I-frame, image, element 13), wherein the quality metric indicates the color, brightness, contrast of the image. (Col. 5, line 61 through Col. 6, line 7). The difference between frames via a pixel based frame difference analysis, or a color histogram analysis are reflective are contrast, brightness, and color saturation differences.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and Cove with Toklu's invention in order to select the best image for the presentation on the EPG.

6.3. As to claim 43, the system of Oosterhout and Cove discloses **wherein the display is configured to display an additional image on a different side of the polyhedron** (as analyzed for claim 1).

The system of Oosterhout and Cove is silent on **the additional image corresponding to a most presentable snapshot for a different selected channel**.

However, Toklu, in analogous art, discloses a method and system for accessing a collection of images (Fig. 2, Video in, element 11), and using a technical quality measure (15, 16, 17) to select the best (most presentable) key frame (I-frame, image, element 13), wherein the quality metric indicates the color, brightness, contrast of the image. (Col. 5, line 61 through Col. 6, line 7). The difference between frames via a pixel based frame difference analysis, or a color histogram analysis are reflective are contrast, brightness, and color saturation differences.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and Cove with Toklu's invention in order to select the best image for the presentation on the EPG.

6.3.1. Regarding claims 44, the system of Oosterhout, Cove, and Toklu further teaches that

receiving a user request to rotate the polyhedron to display information corresponding to the different selected channel (Cove: Figs. 6, and 7; Col. 6, line 37 through Col. 7 line 58); **and**

updating the EPG display by rotating the graphical representation of the polyhedron so that a greater portion of the polyhedron side corresponding to the different selected channel is displayed in the first of the individual image areas (rotating the polyhedron to provide the viewer the face presenting the selected program/show of the channel, e.g. - Cove: Fig. 7A, "Exit" represents the largest viewable surface).

6.4. Regarding claim 52, the system of Oosterhout and Cove is silent on **identifying the first snapshot from the plurality of snapshots captured from the video stream comprises detecting a scene change in the video stream corresponding to the selected channel**.

However, Toklu discloses a key frame (snapshot) selection based on scene change detection (Col. 3, lines 10-16). Also see Shahraray's reference Abstract, Fig. 3 (cited by Toklu) copy of which is also made of record and provided for applicant's convenience.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and cove with Toklu's invention (selecting snapshots based on scene changes in video stream) in order to select the best/ most appropriate snapshot to balance image quality with available resources (see also Toklu's abstract, 1st five lines).

6.5. Regarding claim 54, the system of Oosterhout and Cove is silent on **a scene change detector configured to detect a scene change in the video stream, wherein the image improver is configured to identify the first snapshot based on a scene change detected in the video stream**.

However, Toklu discloses a key frame (snapshot) selection based on scene

change detection (Col. 3, lines 10-16). Also see Shahraray's reference Abstract, Fig. 3 (cited by Toklu) copy of which is also made of record and provided for applicant's convenience.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Oosterhout and cove with Toklu's invention (incorporating a scene change detector to select snapshots based on scene changes in video stream) in order to select the best/ most appropriate snapshot to balance image quality with available resources (see also Toklu's abstract, 1st five lines).

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. MARANDI whose telephone number is (571)270-1843. The examiner can normally be reached on 8:00 AM- 5:00 PM M-F, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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